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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/580,231

02/09/2007

Emil Edwin

EDWI3003/REF

3773

23364 7590 12/12/2008

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EXAMINER

MCCRACKEN, DANIEL

ART UNIT

PAPER NUMBER

1793

MAIL DATE

DELIVERY MODE

12/12/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/580,231	Applicant(s) EDWIN ET AL.	
	Examiner DANIEL C. MCCracken	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 September 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 and 44-46 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-18 is/are allowed.
- 6) ☒ Claim(s) 44-46 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Citation to the Specification will be in the following format: (S. # : ¶/L) where # denotes the page number and ¶/L denotes the paragraph number or line number. Citation to patent literature will be in the form (Inventor # : LL) where # is the column number and LL is the line number. Citation to the pre-grant publication literature will be in the following format (Inventor # : ¶) where # denotes the page number and ¶ denotes the paragraph number.

Allowable Subject Matter & Remarks

Claims 1-18 are allowed. Applicants have now amended Claim 1 to recite various features of their method, specifically what would appear to be the process steps carried out in conjunction with the reactor disclosed. Applicants are effectively claiming what they term a “waisted” arrangement (S. 17: 3) wherein the gas flows through a constricted middle section of a fluidized bed reactor.

Making a “particulate carbon product” (or a carbon nanotube/nanofiber, which is what is really going on) with a fluidized bed reactor - in and of itself – is not inventive. Fluidized beds have received considerable attention in recent years, owing to the ability to operate on industrial scales. The Resasco patent cited in the non-final office action, which is part of a family of related patents, was one of the earlier patents in this field. Other representative patents, pre-grant publications, and non-patent literature are made of record below:

1. US 2004/0151654 to Wei, et al.
2. US 6,905,544 to Setoguchi, et al.
3. US 5,102,647 to Yamada, et al.

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4. Venegoni, et al., *Parametric study for the growth of carbon nanotubes by catalytic chemical vapor deposition in a fluidized bed reactor*, Carbon 2002; 40: 1799-1807.

These references – which are taken as representative of the art - illustrate various forms of a fluidized bed processes. These processes however do not recite passing the gas through a “middle section” with the relative dimensions as required by Claim 1.

Claims 44-46 are drawn to a reactor, *i.e. an apparatus*. “[A]pparatus claims cover what a device *is*, not what a device *does*.” *Hewlett-Packard Co. v. Bausch & Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original). Claim 44 requires a reactor with three sections with the relationship between the cross sectional areas as claimed. The only issue material to patentability is whether the structural features are taught in the prior art. It is immaterial that the prior art may not be used for making “particulate carbon product.” This is a statement of intended use, which is not given patentable weight. To the extent this discussion is necessary to support a rejection *infra*, it is expressly incorporated therein by reference.

Specification

Upon review, it would appear as if the title from the PCT case was not properly transferred to the US (35 U.S.C. §371) case. *See* WO 2005/05229 A3 to Edwin, et wl. The title of the invention in *this* case (“Method”) is hardly descriptive. It would appear as if the Application Data Sheet filed 5/22/2006 is the source of the problem. A new Application Data Sheet as well as amendment to the Specification should be filed to correct this problem in the

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event prosecution proceeds. The Examiner *would not* object to the language used in the international filing: “Method and Apparatus for the Production of Particulate Carbon Products.”

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 44-46 are rejected under 35 U.S.C. 102(b) as being anticipated by US 4,268,359 to Rammler, et al.

With respect to Claim 44, Rammler teaches a reactor with three sections, including a middle section with a cross-sectional area smaller than the other two sections. (Rammler “Fig 1”). As to Claims 45-46, a particulate barrier is reasonably suggested at the top of the reactor. (Rammler 3: 62-66) (“Gaseous and vaporous reaction products leave the reactor 1 through conduit 10 and are preferably supplied to means (not shown) which serve to collect dust, to cool and scrub the gas, and/or to condense vaporous reaction products.”).

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 44-46 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,268,359 to Rammler, et al.

The preceding discussion of Rammler accompanying the anticipation rejection *supra* is expressly incorporated herein by reference. To the extent Rammler may not teach a barrier (the

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Examiner, as indicated above, believes it does), inserting a permeable barrier is an obvious expedient. Rammler teaches purification of the gasses, which would presumably include separation of particulate solids. *See e.g.* (Rammler 5: 54-57) (product gases subject to purification).

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

All amendments made in response to this Office Action must be accompanied by a pinpoint citation to the Specification (i.e. page and paragraph or line number) to indicate where Applicants are drawing their support.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL C. MCCracken whose telephone number is

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(571)272-6537. The examiner can normally be reached on Monday through Friday, 9 AM - 6 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley S. Silverman can be reached on (571) 272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Daniel C. McCracken/
Daniel C. McCracken
Examiner, Art Unit 1793
DCM

/Stuart Hendrickson/
Stuart L. Hendrickson
Primary Examiner